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# The Faces of Bureaucracy: Understanding Enterprise Social Media

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# THE FACES OF BUREAUCRACY: UNDERSTANDING ENTERPRISE SOCIAL MEDIA

*Completed Research*

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## **Abstract**

*The social media are often perceived as tools that support openness and flexible participation among individuals and communities. This might explain the reason why social media have become indispensable for many daily practices in organizations. But how do these organizations appropriate and use these media relative to their formal structures and characteristics is a question in focus for the current paper. Drawing on classical concepts of organizational bureaucracy from Weber (1978) and Eisenstadt (1959), we present a qualitative analysis of empirical data obtained from two large organizations that use a wiki as a collaborative knowledge platform. The results show how the tendency to organize the use of the wiki through introducing structure might create barriers for open and democratic collaboration and knowledge sharing at the workplace. They also show that while a freer approach to using wikis might allow for self-organizing, there is still a possibility for enacting social structures that limit openness and flexibility. As such, the paper contributes novel insights into how social media might be used in bureaucracies and soft bureaucracies.*

*Keywords: Wikis, Bureaucracy, Organization, Social Media*

## 1 INTRODUCTION

For many organizations, the use of social media has become indispensable for their daily business practices. Organizations continue to incorporate various social media tools and services at the workplace in order to exploit their potential in stimulating participation, engagement, and dynamic exchange of information among their employees (Huang et al. 2013). Many scholars for instance examined the use of social media in enterprise settings for improving knowledge sharing practices (Majchrzak et al. 2013), democratizing the flow of knowledge (Hasan & Pfaff 2007; Wagner 2006), reducing control and flattening organizational hierarchies (Bibbo et al. 2010) and accelerating innovation and the development of new products and services (Zwass 2010).

Social media are defined as a group of internet-based applications that build on the ideological and technological foundations of web 2.0 (Kaplan & Haenlein 2010). The wiki technology, which is studied in this paper, represents one kind of social media technologies that is often used by organizations to improve their collaborative and knowledge sharing practices. It is described as a simple technology that allows open, organic, collaborative and incremental development of content (Cunningham 2004). Since wikis are often used by communities to support their collaborative knowledge practices (Yates et al. 2010; Bibbo et al. 2010; Mansour et al., 2011) they have been described as 'next generation knowledge management systems' (Pfaff & Hasan 2007). In general, social media are often seen as a new class of technologies that have the potential to alter organizational processes in fundamental ways (Treem & Leonardi 2012; Huang et al. 2013).

While we believe and to a certain extent agree that social media may have brought new affordances for organizations (Mansour et al., 2013; Treem & Leonardi, 2012;), in this paper we scrutinize the potential of social media and its impact on organizational practices. The question of how social media can affect organizations and how they may transform organizational practices and structures may not be clear yet (Majchrzak et al. 2013; Treem & Leonardi 2012; Saldanha & Krishnan 2013). For instance, Aral et al. (2013) noted that research on social media has rapidly increased in some areas whereas others are nascent or non-existent. With respect to organizational wikis, only little knowledge is known so far about how they are used behind the firewalls of organizations (Mansour et al., 2013; Martine et al. 2013; Danis & Singer 2008; Grudin & Poole 2010; Holtzblatt et al. 2010). So current studies do not contribute enough understandings of why wikis succeed or fail, how they work and what possibilities they may afford in organizations (Martine et al. 2013).

Fortunately, a growing amount of research has recently been published that point to problems, dual impacts, or contradictory influences of using wikis in organizations. Grudin and Poole (2010) suggested that problems may arise when using wikis in organizations because of possible incompatibilities between the wiki bottom-up character and hierarchical top-down structures of organizations. Further emerging perspectives in this area also centre on contradictory and dual influences of using wikis in organizations (e.g., Hildebrand et al. 2013; Mansour et al., 2011; Majchrzak et al. 2013).

In light of these arguments, this paper offers a qualitative empirical analysis of wiki use practices in two large, multinational organizations where the wiki technology is used as a knowledge management platform. It aims at examining and understanding the ways by which wikis are used within formal organizational structures. The central question in the paper is *how do organizations appropriate and use wikis relative to their formal structures and characteristics*. In order to answer our research question, the paper draws on key theoretical concepts from the literature on organizational bureaucracy (e.g., Eisenstadt, 1959; Weber, 1978). The remainder of the paper proceeds as follows: the next section provides an overview of the literature on the use of wikis in organizations, and IT use in relation to organizational bureaucracy. Then, a discussion of key theoretical concepts on bureaucracy is presented in section three. The empirical settings and the data collection and analysis processes are described in section four. In section five, an illustration of the empirical findings is

provided. Finally, the paper ends with a discussion of the main arguments on the bureaucratic use of social media and an outline of key conclusions.

## **2 RELATED LITERATURE**

### **2.1 Wiki Use in Organizations**

A wiki is a simple technology that consists of a set of dynamic, interrelated web pages where people can continually create and edit content (Happel & Treitz 2008; Yates et al. 2010; Hester & Scott 2008). One key property of wikis is collaborative authoring and publishing of content (Majchrzak et al. 2013; Hasan & Pfaff 2007). Wiki content is often produced by many people and is organized by topic and subtopic compared to the chronological organization of content in discussion forums.

Majchrzak et al. (2006) conducted one of the earliest studies on organizational use of wikis. They suggested that wikis might produce three key benefits for organizations: enhanced reputation, make work easier, and help an organization improve its processes. Basically, organizations often seek to use wikis to facilitate the creation and exchange of knowledge among communities (Bibbo et al., 2010). Community members collaborate together to develop evolving, continuously-updated content on the wiki taking advantage of its editability (Treem & Leonardi, 2012). This is enabled by 'knowledge shaping' which is an activity that involves rewriting, integrating, and restructuring content (Yates et al. 2010). Shaping wiki content, Majchrzak et al. (2013) elaborated, is a synthesis and organizing activity in that it involves publicly modifying and reorganizing content, removing redundancies and inconsistencies, and making content more meaningful, usable and maintainable.

By and large, recent studies show that wikis can be used in various forms and produce different consequences for organizations. Wikis can potentially promote an open and democratic organizational attitude to managing knowledge (Hasan and Pfaff 2007). Bibbo et al. (2010) also discussed that wikis may help business organizations in fostering a culture of collaboration which encourages employees to willingly create and share knowledge with each other. Further, wikis can also be used to increase transparency in organizations (Danis & Singer 2008). In a recent article, Majchrzak et al. (2013) explained that wiki users have the possibility to exhibit their knowledge breadth by exposing themselves to more viewpoints or contributing to multiple wikis in other disciplines.

But despite these opportunities, organizations are often faced with problems and challenges when applying wikis at the workplace. Holtzblatt (2010), for instance, identified a number of factors that impede wiki use in enterprise settings such as reluctance to share, extra cost for sharing, information sensitivity, unwillingness to share unfinished work, sensitivities to the openness of information, work practices, and many other factors. In a similar vein, Grudin and Poole (2010) discussed success factors for the sustainability of enterprise wikis. They argued that, while organizations apply wikis to provide a dynamic repository of knowledge, these initiatives are often faced with challenges since management visions do not match the benefits of successful wikis. In addition, Mansour et al. (2013) identified a set of organizational wiki affordances that includes commenting, viewability, accessibility, and validation. These affordances suggest that wikis can be used for limited accessibility where content is subject to reviews by the management which is a barrier for flexible and transparent knowledge sharing and collaboration.

### **2.2 IT Use and Organizational Bureaucracy**

The bureaucratic, rational view of organization is the most dominant in Information Systems (Checkland & Holwell 1998). This view upholds the hierarchical structure which makes for "*the original thread from which the fabric of organization was woven*" (Zammuto et al. 2007 p. 750). The hierarchical structure of organizations then defines authority relationships, specifies information flows, and provides a medium for the control and coordination of activities in organizations (Zammuto et al.

2007). The technical superiority of this mode of bureaucratic, hierarchic organizing is what makes it more dominant than any other forms of organization (Weber 1978; Mintzberg & McHugh 1985).

A typical hierarchical organization is often comprised of people and resources which are combined in a suitable structure that is used to take decisions to achieve defined goals and purposes. This simple understanding of organization is discussed by Checkland and Holwell (1998) and highlights the basic elements of an organization: people, resources, structure, and goals. They argued that much of IS literature applies this model of organization that represents the hard, functional strand influenced by the works of Herbert Simon. In this view, structure is central to facilitating organizational decision-making which is seen to be the fundamental managerial activity (Zwass 1992; Checkland & Holwell 1998). The dominance of this model in IS literature can be referred to the lack of an alternative form which advocates an interpretive, soft view of organization that may challenge the rational, goal-seeking mechanistic view. Checkland and Holwell (1998) even argued that interpretive IS researchers did not offer a model of organization that builds on their soft approaches. One reason for this is that the bureaucratic form of organization tends to be more suited to the fundamental nature of computer systems in that organizations are programmed to perform predefined, formal tasks (Dahlbolm & Mathiassen 1993).

In addition, the role of IT in bureaucratic organizations is discussed by Zammuto et al. (2007). They explained that in the early days IT was used by organizations to automate existing organizational practices, thus enforcing the already existing hierarchy – something they called automated plumbing. IT was therefore taken for granted and deemed negligible. But nowadays, advancements in IT capabilities may be supplanting organizational hierarchies as they offer more flexible control and coordination of activities in organizations. Surely, advanced technologies introduce novel affordances and induce organizational change but whether and how these advancements can fundamentally change organizing is still an issue subject for debate and scholarship.

### **3 THEORETICAL BASIS**

The concept of bureaucracy has been thoroughly researched and investigated by researchers in various research settings (Adler and Borys, 1996; Casey, 2004; Eisenstadt, 1959; Kallinikos, 2004; Vaast, 2007). There are two general viewpoints on bureaucracy. The first view defines bureaucracy as a tool that is developed to efficiently implement particular goal(s). The second view looks at bureaucracy from a power perspective and defines it as an instrument that is used to exercise control over people (Eisenstadt, 1959). Researchers have assessed these two viewpoints, which are not entirely contradictory, from positive and negative assessments (Adler and Borys, 1996): The negative assessment (cf. Walton, 1985) sees bureaucracy as relying on a traditional command and control model (Adler and Borys, 1996). The positive assessment highlights the technical function of bureaucracy and sees it as a coordination mechanism that encourages humans to accomplish their assigned tasks successfully (Deeming, 1986).

Bureaucracy is an organizational topic by nature. Understanding the development of bureaucratic organizations is among the most researched topics by scholars. According to Eisenstadt (1959) the development of bureaucracy relies on various factors: (1) the differentiation between roles (e.g., economic, political, etc.), (2) the differentiation between membership and achievement, (3) the differentiation between functional groups (e.g., board of directors vs. field engineers), (4) the differentiation of the definition of a community, and (5) the differentiation in the social structure. These force different kinds of institutional units inside organizations to compete for resources and support to achieve their goals while practicing, facing and dealing with bureaucracy overtime.

Studying bureaucracy in organizational contexts is tightly connected with authority (Casey, 2004). This has been explained by the theory of bureaucracy developed by Weber (1978) where the rulers (e.g., managers, business owners) believe that they have the right to exercise authority of their own will, and the ruled (e.g., employees, workers) obey the demands is unquestionable duty. Weber's

(1978) efforts to explain this led to a “rational-legal” of bureaucracy that is seen as the “legitimate authority within bureaucratic organizations” (Casey, 2004, p.62). The rational-legal rules separate between the rules and humans administrating them within organizations. This differentiates modern organizations from other types of organizations of its “rationalization of authority and legality” (Casey, 2004, p.62). This rationalization maintains the domination of bureaucratic administration through knowledge (Weber, 1978). It exemplifies the practices of managers encouraging and facilitating the participation of their employees in workshops, seminars and training programmes to gain knowledge that aids decision makers (Casey, 2004).

In his study Vaast (2007) reported how knowledge management systems directly impact a bureaucratic environment. The study shows how online practices impact bureaucratic offline practices. The emergent continuity between both practices lead to the practice of soft bureaucracy. It is identified by Courpasson (2000) as “an organization where processes of flexibility and decentralization co-exist with more rigid constraints and structures of domination” (p. 157). Top management used to promote the concept of soft bureaucracy to maintain the self-organizing for their knowledge workers while streamline the organizational processes (Hodgson 2004; Karreman and Alvesson 2004). Vaast (2007) emphasized that the trend of soft bureaucracy that is a result of online and offline practices should be identified throughout the organization by examining the conditions and processes in which bureaucracies are developed.

## **4 EMPIRICAL METHOD**

### **4.1 Enterprise Settings: CCC and IBM**

The current study took place at two large, multinational organizations: CCC and IBM. Each uses the wiki technology as a platform for knowledge collaboration and sharing. The first organizational setting is CCC. CCC is an acronym which stands for Consolidated Contractors Company. It is one of the largest construction companies in the world and is specialized in offering a myriad of construction, contracting, and engineering services. It was founded in 1952 and is currently ranked number 13<sup>th</sup> in the top international contractors list by the Engineering News Record magazine. The company has over 170000 employees in more than 100 countries. It is worth noting that CCC has increased its manpower from 25000 in 2003 up to 170000 nowadays. The company was thus confronted with various challenges due to this exponential leap in the numbers of employees including lack of and inconsistent communication across projects, high levels of decentralization, complex knowledge transfer and many other challenges. The company then decided to establish a Knowledge Management (KM) department responsible for setting a strategy for a corporate knowledge network in 2007.

The KM department was first tasked with finding a collaborative platform that would help the company in building a ‘knowledge rich culture’ and allow them to leverage expertise and knowledge. The department decided to use a wiki as a collaborative platform for knowledge collaboration and sharing practices. The wiki was officially launched in 2008. It was mainly used by what the company call ‘communities of practice’. These communities represent various professional groups who use the wiki as a central platform to collaborate and share knowledge obtained through projects. They often share, for instance, method statements that describe specific and formal techniques and procedures used in real-life projects. These communities are structured, that is, each community has a specific structure defining roles and relationships among the community members. So there are community leaders, community captains, subject matter experts and other regular members. The wiki is only accessible by community members. Anyone interested in a particular professional area is expected to send a request to the KM department that decides whether to grant accessibility or not. The wiki is therefore fully controlled by the KM department and can only be accessible through an internal, secure CCC network. Further, the wiki is not ‘open’ in the sense that it is not possible for anyone to create or edit articles - that mostly depends on the defined role of each community member. When a member is allowed to share content on the wiki, it is often the case that a senior community member would

review it and decide whether to provide approval for publishing or not. The wiki is currently used by 11 communities and the company aims for up to 50 communities.

The second organizational setting is IBM. It is also a large, multinational company and often referred to as the largest software company in the world. IBM is mainly specialized in developing software and hardware products and also offering consulting and hosting services. One important product is IBM Connections. It is a universal social platform that includes a myriad of social collaboration tools such as wikis, blogs, status updates, file sharing, ideation, user profiles, community spaces, and other social tools. Connections, as people inside of IBM call the platform, was first released by Lotus Software which was owned by IBM in 2007. The focus in this study was on the wiki part of Connections. Wikis at IBM can be created by anyone and can be used for various purposes. So there is no central control of the use of wikis. Any employee within IBM can, for instance, create a wiki for a private project team, public community, personal publishing tool, and many other purposes. Access to these wikis is determined by their purposes. So a public community can be virtually accessed by the 400000 employees who work at IBM. But a wiki created to serve as a platform for a private project team can only be accessed by the team members. People who create wikis can control them. Anyone who creates a wiki can determine how public or private a wiki can be, who can access it and what possibilities a wiki can afford (e.g., editing, commenting, etc.). There are now thousands of wikis at IBM which are used for various professional and social purposes.

## 4.2 Choice of Method and Data Collection

The qualitative interview method was the primary vehicle for collecting empirical data at both CCC and IBM. The choice of using the interview method was primarily motivated by our interest in understanding individuals' use practices of the wiki technology in enterprise settings. This involved focusing on peoples' experiences, actions, thoughts and many other forms of social practices. This suggests that in order to understand the use of technology there is a need for a method that can help in obtaining the meanings of peoples' experiences and also engaging with them directly. The interview is the most suitable method to achieve such purposes (Schultze & Avital 2010; Kvale 1996). Also, as a tool for collecting qualitative empirical data (Schultze & Avital 2010), the interview method is considered a powerful research tool (Kvale 1996) that can help in developing insights into human thought and action (Klein & Myers 1999).

Data Sources	Description
Interviews	<p>- The total number of interviews: 38</p> <p><b>Company:</b> 27 interviews at CCC over two phases, 11 interviews at IBM.</p> <p><b>Type:</b> 15 interviews over phone, 11 over Skype and 12 Face-to-Face.</p> <p><b>Country:</b> 4 interviews in USA, 17 in Greece, 2 in UK, 4 in Denmark, 1 in Qatar, 1 in Spain, 2 in KSA, 1 in Australia, 3 in Oman, 1 in Kazakhstan and 2 in UAE.</p> <p><b>Interviewee's role:</b> 6 project managers, 9 engineers, 2 social media evangelists, 13 managers, 3 IT professionals, 1 HR specialist, 2 technical professionals, 1 sales professional and 1 learning intelligence leader.</p>
Documents	<b>Official documents:</b> KM presentations, stats on the wiki, and monthly newsletters.
Field Work	<b>Community meetings:</b> 2 field visits and live observation of the wiki in action.

Table 1. Summary of data sources at CCC and IBM.

The total number of interviews at the two companies was 38. A summary of these interviews is shown in Table 1 above. 27 interviews took place at CCC over two phases of data collection. 15 interviews were completed in the first phase and 12 in the second. The second phase of data collection at CCC included participants interviewed in the first phase so a number of participants were interviewed twice in different periods of time. In parallel to the second phase at CCC, 11 interviews were also performed

at IBM. It should be noted that the number of interviews at CCC is higher than in IBM because several of CCC participants were willing to be interviewed twice. Also, the data collection was part of a larger project which was time-limited. The collection of data at IBM started later within the project time which created limitations for further investigation at the company.

There was diversity in the participants' seniority, levels of expertise, cultural backgrounds, and wiki use experience that can be seen in Table 1 above. Interviews in both CCC and IBM were performed through various channels such as face-to-face discussions, Skype, and telephone communications. The reason for this is the geographical distribution of the participants over a number of countries. The average interviewing time was 50 minutes and all interviews were recorded using an audio recorder, transcribed, and later verified by the participants.

While interview data represent the backbone of our analysis, other sources of data mainly official organizational documents and field visits were used to provide further support for our empirical data set. It is important to note that obtaining documents and visiting the field was only possible at CCC. In general, documents allowed us to get insights into actual wiki uses in terms of number of contributions, interaction frequency, and so on. Field visits – two visits took place at CCC headquarters in Greece and Abu Dhabi to attend community meetings – were useful to obtain practical insights into how community members use the wiki at CCC. During the meeting, the wiki interface was projected into a screen and community members discussed different issues and put it live on the wiki. It has overall given us a sense of power relations among members and the adaptation of wiki functionalities to meet the community's needs.

### 4.3 Data Analysis

The analysis of empirical data follows the hermeneutic tradition of analysis. That is to say we sought an explication of the meaning of the qualitative text obtained through interviews (Cole & Avison, 2007). A number of key theoretical concepts of bureaucracy were applied during the data analysis to support theoretical development based on the meanings implied in key empirical instances. These concepts include bureaucracy as instrument, bureaucracy as a coordination mechanism, roles, membership and achievement, functional groups, community, social structure (Eisenstadt, 1959), and the different types of domination (Weber, 1978).

The application of these concepts was enabled by the hermeneutical circle (Cole & Avison, 2007). It is described as a mechanism for analysing textual data in an iterative, spiral manner (Klein & Myers, 1999; Cole & Avison, 2007). This was applied in our analysis through examining the meanings of different parts in the text and then establishing meaningful relationships across them. Two key interpretive processes were used as means to explicate the meanings in the text: *understanding* and *explanation* (Cole & Avison, 2007). The actual data analysis was therefore performed with emphasis on developing certain interpretive understandings of text in light of chosen theoretical concepts and then explaining these meanings for the development of our theoretical arguments.

Each individual interview transcript was examined by both authors separately but using the same analytical processes. This involved first reading and understanding the text in each interview transcript and then explaining the data based on theoretical concepts. We used a simple table (cf. Miles & Huberman, 1994) comprised of three main columns. The columns include the theoretical concepts, empirical quotes, and a brief explanation of how the concept is related to the quote.

Initially, understanding the data in terms of identifying key empirical instances and linking these to theoretical concepts was the main focus. This was an interpretive effort concerned with making sense of the data in order to establish meaningful links and connections to theoretical concepts. The aim from this interpretative understanding was achieved by documenting several key empirical instances in relation to certain theoretical concepts in two separate tables developed by both authors of the paper. The tables were later compared in order to summarize dominant instances and concepts in one shared table to be further examined.



Then, for further examination and interpretation of the data, we started to develop explanations of the links that we found between the data and the theoretical concepts in the previous understanding step. So focus was placed on elaborating these linkages in an attempt to do interpretive reflection and reconstruction of the data relative to theoretical concepts. Cole & Avison (2007) described this as “*shared meaning is interpreted anew*” (p. 825). We re-examined the data in the summarized table with emphasis on eliciting potentially new meanings from the data and developing theoretical understandings that satisfy the core focus of each concept. An explanation was thus developed for each of concept and its relevant empirical quotes. Hence, the development of these explanations aimed at providing a basis for discussing our theoretical arguments primarily in relation to identifying different forms of bureaucratic practices in the context of using a wiki in enterprise settings.

## 5 EMPIRICAL FINDINGS

### 5.1 Wiki Use at CCC

The use of the wiki at CCC is essentially bureaucratic. There are many dimensions of the bureaucratic use of the wiki in this organization. One key dimension is related to the structure of communities of practice that use the wiki. As stated in the description of the organizational setting above, the wiki at CCC is mainly used by professional communities and anyone who wishes to use the wiki needs to be a member in one or more of these communities. The bureaucracy here can be understood in terms of the hierarchical structures and authority relations that determine the roles and tasks of each member as well as the flow of knowledge within the community. In fact the structure of these communities reflects in many ways the dominant bureaucracy of the organization. That is, each community has some sort of ‘top management’ that determines the subjects to be shared and discussed on the wiki, reviews any content shared by members and makes decisions about who can join in the community. A Mechanical Manager, for instance, commented on how community leaders and captains are responsible for verifying and reviewing content on the wiki:

*“We have many procedures in the pre-commissioning community. We have four captains to approve these procedures.”*

Community leaders and captains also meet offline to discuss different issues related to the community and their wiki collaboration. These meetings are essential to the growth and continuity of each community because senior members meet together to implement plans that they agree on and decide action items to move with the community forward. Mostly, these are formal meetings led by senior community members with a ‘modest’ participation of junior employees. One of the Control Quality Managers explained the role of these meetings:

*“it is not only exchanging ideas online. We have meetings ... people of these communities meet and discuss things, and the thing is that this is some kind of filtering and coming up with better ideas. Also it is about coming up with consensus and agreement on these ideas. So it’s not only writing and reading.”*

Equally importantly, content shared across these communities is not openly accessible by everyone. The issue of accessibility to the wiki is actually an important dimension that reflects the enriched bureaucratic thinking in the organization. In many cases, people, especially junior employees, had difficulties to access content on the wiki. Usually, controlled accessibility to the wiki is a preference for senior managers. One of the Plant Group Managers strongly explained his opinion:

*“the wiki is not Facebook where it is completely open ... You only invite certain number of company employees to share their knowledge.”*

The manager here makes a reference to Facebook to emphasize that the wiki should not be open to everyone like in social networks and that it should only be used for professional purposes. This tendency to control access to the wiki resulted in problems for junior and less experienced employees.

Salma, an administrator, explained her concerns with accessibility and the need to submit a formal request to get access to the wiki:

*“...you need to send a request and mostly they will approve it. But some people think that is limited for only specific people. And so maybe this perception influenced my opinion.”*

In fact, CCC treats content shared on the wiki very seriously in that it considers any content to be some kind of formal professional procedures or method statements that represent actual knowledge and experience. This is what gives senior community members privileges in using the wiki and controlling shared content. A Control Project Manager explained:

*“Although we share ideas we may reach disagreement...Then some more senior people should interfere ... so it's not only about sharing the knowledge. At the end of the day, when it comes to real execution of the job, somebody must have a say and say yes I agree. This is the way to do it.”*

In addition, the bureaucratic use of the wiki at CCC takes many forms as can be seen in the empirical instances above. Each of these instances reflects some dimensions of bureaucracy such as control, hierarchy and formal relationships. Such factors drive a bureaucratic use of the wiki in the sense that it is not used for informal, flexible and open collaboration. Interestingly, these factors are essentially rooted in the formal top-down structure of the organization.

## 5.2 Wiki Use at IBM

While the use of the wiki at IBM may seem less bureaucratic compared to CCC, still there are some intriguing forms of bureaucracy that affect the use of the wiki. Bureaucracy at IBM does not take the typical form of control and hierarchy. It is mainly found in practice as people attempt to use the wiki for various collaborative purposes. That is to say, people are not entirely constrained by the organizational hierarchical structure or any other established organizational forms (e.g., formal rules, standard procedures). Instead, people tend to enact and engage in bureaucratic practices that often limit their opportunities for using and exploiting the wiki. These practices are not necessarily formal but people create some kind of ‘informal boundaries’ that exhibit some kind of bureaucracy. Many groups and communities that use wikis for a variety of purposes often develop informal rules and guidelines to govern and manage their use of the wiki. These then become standards for how each community member is expected to use the wiki. A User Experience Professional described how his team develops internal agreements to assign each member of the team a specific role:

*“The whole wiki is open for everybody. But we just have an agreement, okay, here is the master writer for this, and Sally is the master writer for this one, and Bob is the master writer for this one, and everybody else just comments.”*

Similarly, software developers also develop internal project guidelines within their teams to manage their collaboration using the wiki. One Expert Software Developer said:

*“We created a wiki where we agreed about the guideline and then we just worked from there...”*

Even on a personal level, there are people who can create their own wikis and use them as a way to publish personal thoughts and experiences; something that is reminiscent of a blog rather than a wiki. A User Experience Professional said:

*“...my experience is that some people are using the wiki technology as just a simple way to publish things so instead of using a blog or a word document they're actually using wikis not in the Wikipedia sense that says my goal is to create a page and let everybody else to make it better...”*

Further, sometimes wiki users bound themselves by their professional roles when it comes to engaging with others to develop wiki content. Here, for instance, a Client Technical Professional talks about how she sees her own role relative to others and how it affects her possible contribution into the wiki:

*“... if it is a product documentation wiki I wouldn't go in directly in that document... that is because I am a user and the other ones are the kind of producers ... I mean the producers that have this as their job responsibilities...”*

These practices suggest that wiki users at IBM may tend to indulge in bureaucratic wiki uses by creating informal rules and roles as well as developing certain perceptions or interpretive schemes of how the wiki works that often limit them from exploiting the potential of the wiki. It is bureaucracy because the aim is to control and govern the use of the wiki and to make wiki collaboration more formal and bound by professional rules and norms at the workplace. This is especially true when wiki users come from different professional backgrounds and levels of expertise. In IBM, people are very sensitive to these issues in relation to their use of the wiki. A Learning Intelligence Leader explained his view, for instance, concerning others editing his content on the wiki which emphasizes his attitude as an expert, he said:

*“I am a quite senior resource within our team. I would be very surprised to see other team members editing my manager's post or even editing my post.”*

Another similar view shared by an Expert Software Developer when he was asked for his opinion of someone else editing his content:

*“I would find that this person is breaking a social habit. Without contacting me first and putting a comment or anything that would be a bit weird.”*

The view held by the software developer implies an important dimension of bureaucracy. Despite the lack of formal rules in the wiki environment, still there are informal social practices that require wiki users to behave in certain ways. In this case, the expert software developer expects others to contact him if they wish to contribute anything to his content on the wiki. In other cases, people at IBM do some kind of self-organizing in that they only contribute and collaborate with people of similar backgrounds and expertise. This was explained by an Information developer, she said:

*“...when I am collaborating with a software developer I tend to comment. But when I am collaborating with other information developers I tend to edit.”*

Another aspect, which suggests the tendency for formal wiki collaboration at IBM, can be found in the kind of content shared on the wiki. A Sales Enablement Professional explained:

*“We're not personally invested in the wikis and the kinds of ideas that we share on the wiki, it is never an opinion or it is never a discussion it is always facts.”*

Finally, a Project Manager who has an assignment to setup wikis and monitor them reflected her general opinion about sharing content on the wiki inside the company, she said:

*“So it is more like their knowledge sharing, more than it is actually people sharing knowledge.”*

## 6 DISCUSSION

The application of social media in enterprise settings is often driven by the interest in supporting dynamic and flexible collaboration and knowledge sharing. Our focus in this paper is on examining and highlighting how wikis are appropriated and used within the formal structures of an organization.

As suggested by our empirical findings from CCC, one key form of the bureaucratic use of the wiki is the structure of communities of practice. These communities are the backbone of the wiki platform; they provide a medium for community members to collaborate and share knowledge. However, the structure of these communities reflects the two views of the role of bureaucracy by Eisenstadt (1959). One the one hand, structured communities is a tool to achieve the purpose of creating and sharing knowledge collaboratively using the wiki. On the other, it is a tool to exercise control not necessarily over people but over content generated on the wiki.

This can also be seen in the data in relation to formal review procedures and offline meetings among senior community members who review and approve content. Here the differentiation in roles and functional groups (e.g., junior employees, senior employees) (Eisenstadt, 1959) is what makes for the legitimate authority discussed by Weber (1978). Authority and power relations are fundamental in CCC. For instance, anyone who wants to be a community member is required to submit a request to their managers as well as the knowledge management department. Content creation and sharing is also a subject of rationalization of authority (Casey, 2004; Weber, 1978). There is a tendency by managers and seniors experts to show dominance over content which results in barriers for other junior members of the community. Editing, contributing and manipulating wiki content maybe difficult because dominant community members may restrict wiki affordances (Treem & Leonardi, 2012; Mansour et al., 2013) for others.

The use of the wiki at IBM reflects a soft bureaucracy (Vaast, 2007; Courpasson, 2000). The data obtained from this company show that it has a culture of openness and flexibility that encourages employees to use the wiki for dynamic collaboration and knowledge sharing practices. These practices however are still bound by existing differentiations in roles, functional groups, and social structures (Eisenstadt, 1959). The different elements discussed by Eisenstadt make for a soft bureaucracy in that wiki users are somehow limited by their professional roles and affiliations as suggested by the data. Employees within the same professional group and who have similar roles (e.g., software developers) would find it easier to share with each other compared to sharing with other professional groups.

Perhaps what might be an explicit element of soft bureaucracy at IBM is self-organizing (Hodgson 2004; Karreman and Alvesson 2004). Wiki users tend to self-organize by enacting both informal and formal rules to organize and govern the use of the wiki. For instance, informal agreements, guidelines or habits are often discussed among wiki users about who to contribute and what to contribute. In other instances, there are people assigned with 'formal tasks' to edit content or to publish content onto the wiki. The data suggests that such rules serve as functions or drivers for soft bureaucracy. That is, they help as coordination mechanisms among wiki users to support them in achieving their purposes from collaborative practices (Deeming, 1986). The community structures at CCC are relevant to such formalization of tasks through which certain wiki users become some sort of wiki managers (e.g., community captains, subject matter experts).

Self-organizing in a soft bureaucracy was observed to lead to certain forms of organizing that are not necessarily conducive to flexible collaboration and sharing with wikis. Employees at IBM for instance have the freedom to setup wikis and use them as a blog for publishing and sharing personal opinions. This may transform wikis into what might seem like a restricted environment and wiki ownership becomes a tool to control content. That is not to say that this kind of organizing is a form of rational bureaucracy (Weber, 1978) but it may lead to the development of guarded wiki silos. Another relevant form of organizing is probably related to differentiations discussed by Eisenstadt (1959). While the data from IBM suggests that bureaucracy primarily functions as a coordination mechanism for wiki users, self-organizing was also a mean for them to account for their professional roles. It was observed that IBM wiki users sometimes discussed their professional roles and expertise in relation for instance to contributing and editing content onto the wiki. That was neither an exercise of control nor an effort to legitimize an authority. But it can be argued that the levels of flexibility and openness might be constrained when expert wiki users demand that they must be consulted sometimes about the content they contributed into the wiki. Others might therefore be discouraged or tend to be limited by what might seem to them a sort of control and domination over content.

## **7 CONCLUSIONS**

The current study is focused on examining the ways by which social media are used within the formal boundaries of an organization. It aimed at highlighting how bureaucratic characteristics of organizations such as authority relations, domination, control, differentiation in roles and functional

groups, and others affect how wikis are appropriated and used at the workplace. The study of two organizations with different structural setup led to various insights into our focus on social media use and organizational bureaucracy. It was shown that community structures that aimed at providing coordination mechanisms for the organization of community activities on the wiki were a cause for command and control. The reason for this can be due to the potentially flexible and open ways of content creation and generation on the wiki. The management in each community was concerned about the validity and accuracy of content, expertise levels of community members, and also their tendency to impose control. Community structures were thus seen as a backbone for a command and control hierarchy in the wiki environment. Relevant social structures existed in the other organization but for completely different reasons. The flexibility and openness of using the wiki allowed people to self-organize and gave them the freedom to be in control of what they create and share. This fostered and encouraged people to openly collaborate and share knowledge with other. But self-organization was also a mean for others to limit openness and flexibility by giving individuals the power to control how they use the wiki and how to let others approach their content. A soft bureaucracy can thus be enacted due to discontinuity between control and flexibility or openness and protection. There are many faces of bureaucracy that can be enacted and the degree to which this bureaucracy affects technology and its use in the workplace will always vary relative to unique organizational characteristics, hence resulting in different consequences of technology use.

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